

Annuity Problems  
p522-523 q 1-17  
Chapter Self test  
p524 q 1-11

Jan 9-11 th  
Culminating P2 Tues-Thurs

May 31-7:52 AM

10. The Huang family borrowed \$30 000 at 9%/a compounded monthly to buy a motor home. The Huangs will make payments at the end of each month. They have two choices for the term: 5 years or 8 years.
- Determine the monthly payment for each term.
  - How much interest would they save by selecting the shorter term?

Dec 20-9:42 AM

Lesson 8.6

12. Adrianna wants to buy a used car. She can afford payments of \$300 each month and wants to pay off the debt in 3 years. The bank offers a rate of 9.8%/a compounded monthly. What is the most Adrianna can spend on a vehicle?

Dec 20-9:58 AM

By Hand

14. How much must be in a fund paying 6%/a compounded semi-annually if you wish to withdraw \$1000 every 6 months, starting 6 months from now, for the next 5 years?

$$PV = R \frac{1 - [1 + i]^{-n}}{i}$$

$PV =$   
 $R =$   
 $i =$   
 $n =$

Dec 20-10:06 AM

By Hand

14. How much must be in a fund paying 6%/a compounded semi-annually if you wish to withdraw \$1000 every 6 months, starting 6 months from now, for the next 5 years?

$$PV = R \frac{1 - [1 + i]^{-n}}{i}$$

$PV = ?$   
 $R = 1000$   
 $i = 0.06/2 = 0.03$   
 $n = 5 \times 2 = 10$

$$= \frac{1000 [1 - (1.03)^{-10}]}{0.03}$$

$$= \frac{1000 [1 - 0.74]}{0.03}$$

$$= \frac{1000 (0.26)}{0.03}$$

$$= 8666.67$$

Dec 20-10:06 AM

By Hand

- b) Farouk would like to have \$200 000 in his account in 15 years. How much should he deposit at the end of each month in an account that pays 3.75%/a compounded monthly?

$$FV = R \frac{(1 + i)^n - 1}{i}$$

$FV$   
 $R$   
 $i$   
 $n$

Dec 20-10:18 AM

By Hand

b) Farouk would like to have \$200 000 in his account in 15 years. How much should he deposit at the end of each month in an account that pays 3.75%/a compounded monthly?

$FV = R \frac{[(1+i)^n - 1]}{i}$

$FV = 200\,000$   
 $R = ?$   
 $i = 0.0375/12 = 0.0031$   
 $n = 15 \times 12 = 180$

$200\,000 = R \frac{[(1.0031)^{180} - 1]}{0.0031}$

$200\,000 = R \frac{[1.7457 - 1]}{0.0031}$

$200\,000 = R \frac{0.7457}{0.0031}$

$200\,000 = R \cdot 240.74$

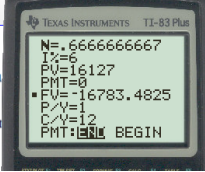
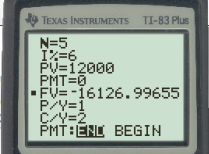
$\$30.08 = R$

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4. Carter deposits \$12 000 in an account that pays 6%/a compounded semi-annually. After 5 years, the interest rate changes to 6%/a compounded monthly. Calculate the value of the money 8 months after the change in the interest rate.

After 5 years

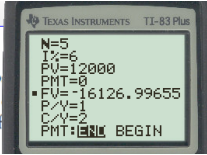
After another 8 months



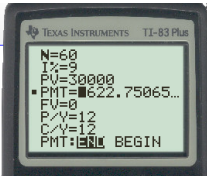
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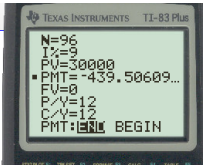


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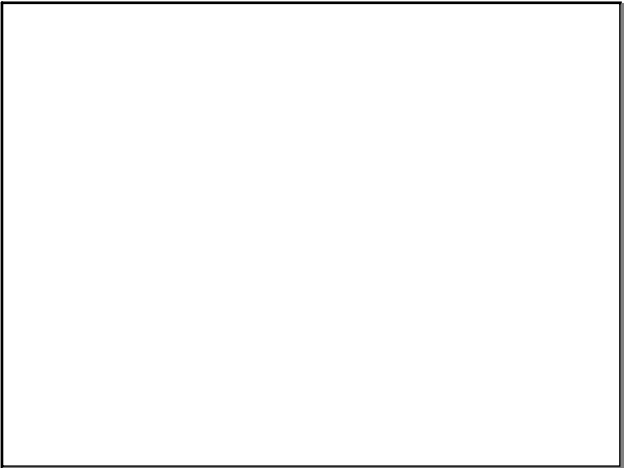
$622.75 \times 60 = 37\,365.00$

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$439.51 \times 96 = 42\,172.76$

Dec 20-9:52 AM



Dec 20-7:36 AM